NRC FORM 618 (8-2000) 10 CFR 71			U.S. NUCLEAR REGULATORY COMMISSION		
CERTIFICATE OF COMPLIANCE FOR RADIOACTIVE MATERIAL PACKAGES					
1 a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9302	2	71-9302	USA/9302/B(U)F-85	1 OF	8

2 PREAMBLE

a This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. ISSUED TO *(Name and Address)*

Transnuclear, Inc.
7135 Minstrel Way, Suite 300
Columbia, MD 21045

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Transnuclear Inc., application dated May 2, 2001.

4 CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model No.: NUHOMS®-MP197

(2) Description

The NUHOMS®-MP197 package consists of an outer cask, into which a NUHOMS®-61BT transportable dry shielded canister (DSC) is placed. During shipment, energy-absorbing impact limiters are utilized for additional package protection. Additionally, a personnel barrier is mounted to the transportation frame to prevent access to the cask body.

Cask

The NUHOMS®-MP197 transport cask is fabricated primarily of stainless steel. Non-stainless steel members include the cask lead shielding between the containment boundary inner shell and the structural shell, the o-ring seals, the neutron shield, and carbon steel closure bolts. The body of the cask consists of a 1.25 inch thick, 68 inch inside diameter, stainless steel inner (containment) shell and a 2.5 inch thick, 82 inch outside diameter stainless steel structural shell, without impact limiters, which sandwich the 3.25 inch thick cast lead shielding. The overall external dimensions of the cask are 208 inches long and 91.5 inches in outer diameter. The weight of cask body is 148,840 pounds, including about 10,000 pounds of neutron shield and 60,000 pounds of cast lead.

5. (a) (2) Description (continued)

The containment system of the NUHOMS®-MP197 transportation cask consists of the inner shell, a 6.50 inch thick bottom plate, 2.5 inch thick RAM access closure with a diameter of approximately 24 inches, a top closure flange, a 4.5 inch thick top closure lid with closure bolts, drain port closures and bolts, and double o-ring seals for each penetration. The containment vessel prevents leakage of radioactive material from the cask cavity. The cask cavity is pressurized to above atmospheric pressure with an inert gas (helium). Helium assists in the heat removal. Shielding is provided by about 4 inches of stainless steel, 3.25 inches of lead, and about 4.5 inches of neutron shielding. Four removable trunnions are provided for handling and lifting of the cask.

Dry Shielded Canister (DSC)

The purpose of the DSC, which is placed within the transport cask, is to permit the transfer of spent fuel assemblies, into or out of a storage module, a dry transfer facility, or a pool as a unit. The DSC also provides additional axial biological shielding during handling and transport. The DSC consists of a stainless steel shell and a basket assembly. The shell has an outside diameter of about 67 inches and an external length of about 200 inches. The DSC basket assembly provides criticality control and contains a storage position for each fuel assembly. No credit is given to the DSC as a containment boundary. The basket is designed to accommodate 61 intact BWR fuel assemblies with or without fuel channels. The basket structure consists of a welded assembly of stainless steel tubes (fuel compartments) separated by poison plates and surrounded by larger stainless steel boxes and support rails.

The poison plates are constructed from borated aluminum, and provide a heat conduction path from the fuel assemblies to the canister wall, as well as the necessary criticality control.

Impact Limiters

The impact limiter shells are fabricated from stainless steel. Within that shell is a laminate of balsa wood and redwood. Each impact limiter is attached to the cask top (front) and bottom (rear) by 12 bolts. The impact limiters are provided with seven fusible plugs that are designed to melt during a fire accident, thereby relieving excessive internal pressure. Each impact limiter has two hoist rings for handling. The hoist rings are threaded into the impact limiter shell. During transportation, the impact limiter hoist rings are removed. An aluminum thermal shield is added to the bottom impact limiter to reduce the impact limiter wood temperature. The weight of the impact limiters, the thermal shield, and attachment bolts, is approximately 28,000 lbs.

(3) Drawings

The package shall be constructed and assembled in accordance with the following Transnuclear Inc., drawing numbers:

1093-71-1, Revision 0, NUHOMS®-197 Packaging Transport Configuration

1093-71-2, Revision 1, NUHOMS®-197 Packaging General Arrangement

1093-71-3, Revision 1, NUHOMS®-MP197 Packaging Parts List

1093-71-4, Revision 1, NUHOMS®-MP197 Packaging Cask Body Assembly

1093-71-5, Revision 0, NUHOMS®-MP197 Packaging Cask Body Details

1093-71-6, Revision 0, NUHOMS®-MP 197 Packaging Cask Body Details

1093-71-7, Revision 0, NUHOMS®-MP197 Packaging Lid Assembly & Details

1093-71-8, Revision 0, NUHOMS®-MP197 Packaging Impact Limiter Assembly

1093-71-9, Revision 0, NUHOMS®-MP197 Packaging Impact Limiter Details

1093-71-10, Revision 0, NUHOMS®-61BT Transportable Canister for BWR Fuel Basket Assembly

1093-71-11, Revision 1 NUHOMS®-61BT Transportable Canister for BWR Fuel Basket Details

1093-71-12, Revision 0, NUHOMS®-61BT Transportable Canister for BWR Fuel Basket Details

1093-71-13, Revision 1, NUHOMS®-61BT Transportable Canister for BWR Fuel General Assembly

1093-71-14, Revision 1, NUHOMS®-61BT Transportable Canister for BWR Fuel General Assembly

1093-71-15, Revision 2, NUHOMS®-61BT Transportable Canister for BWR Fuel Shell Assembly

1093-71-16, Revision 0, NUHOMS®-61BT Transportable Canister for BWR Fuel Shell Assembly

1093-71-17, Revision 2, NUHOMS®-61BT Transportable Canister for BWR Fuel Canister Details

1093-71-18, Revision 1, NUHOMS®-61BT Transportable Canister for BWR Fuel Canister Details

1093-71-20, Revision 0, NUHOMS®-MP197 Packaging Regulatory Plate

1093-71-21, Revision 0, NUHOMS®-MP197 Packaging on Transport Skids

5. (b) Contents of Packaging

(1) Type and Form of Material

(a) Intact irradiated BWR fuel assemblies, with or without fuel channels, with uranium oxide pellets and zircaloy cladding. Channel thickness is limited to 0.065 to 0.120 inches. Prior to irradiation, the fuel assemblies must meet the dimensions and specifications of Table 1. Assemblies containing fuel rods with no known or suspected cladding defects greater than hairline cracks or pinhole leaks are authorized when contained in the NUHOMS®-61BT DSC.

(b) The maximum burn-up and minimum cooling times for the individual assemblies shall meet the requirements of Table 2. In addition, the fuel shall have been decayed for a time sufficient to meet the thermal criteria of 5(b)(1)(c). The maximum total allowable cask heat load is 15.86 kW.

(c) The maximum assembly decay heat of an individual assembly is 260 watts.

(d) BWR fuel assembly poison material shall meet the design requirements of Table 3.

TABLE 1[1]

Assembly Type	7x7 49/0	8x8 63/1	8x8 62/2	8x8 60/4	8x8 60/1	9x9 74/2	10x10 92/2
Maximum Initial Enrichment (wt% ^{235}U)	See Table 3	See Table 3	See Table 3	See Table 3	See Table 3	See Table 3	See Table 3
Rod Pitch (in)	0.738	0.640	0.640	0.640	0.640	0.566	0.510
Number of Fuel Rods per Assembly	49	63	62	60	60	66-full 8-partial	78-full 14-partial
Fuel Rod OD (in)	0.563	0.493	0.483	0.483	0.483	0.440	0.404
Minimum Cladding Thickness (in)	0.032	0.034	0.032	0.032	0.032	0.028	0.026
Pellet Diameter	0.487	0.416	0.410	0.410	0.411	0.376	0.345
Maximum Active Fuel Length (in)	144	146	150	150	150	146-full 90-partial	150-full 93-partial

[1)] Maximum Co-59 content in the Top End Fitting region is 4.5 gm per assembly
Maximum Co-59 content in the Plenum region is 0.9 gm per assembly
Maximum Co-59 content in the In-Core region (including the whole fuel channel) is 4.5 gm per assembly
Maximum Co-59 content in the Bottom region is 4.1 gm per assembly

TABLE 2

Intact BWR Fuel Assembly Characteristics	
Physical Parameters:	
Fuel Design	7x7, 8x8, 9x9, or 10x10 BWR fuel assemblies manufactured by General Electric or equivalent reload fuel
Cladding Material	Zircaloy
Fuel Damage	Cladding damage in excess of pinhole leaks or hairline cracks is not authorized to be stored as "Intact BWR fuel"
Channels	Fuel may be stored with or without fuel channels
Maximum assembly weight	705lbs
Radiological Parameters:	
Group 1:	
Maximum Burnup:	27,000 MWd/MTU
Minimum Cooling Time:	6-Years
Maximum Initial Enrichment:	See Table 3
Minimum Initial Bundle Average Enrichment:	2.0 wt. % U-235
Maximum Initial Uranium Content:	198 kg/assembly
Maximum Decay Heat:	260 W/assembly
Group 2:	
Maximum Burnup:	35,000 MWd/MTU
Minimum Cooling Time:	12-Years
Maximum Initial Enrichment:	See Table 3
Minimum Initial Bundle Average Enrichment:	2.65 wt. % U-235
Maximum Initial Uranium Content:	198 kg/assembly
Maximum Decay Heat:	260 W/assembly

Intact BWR Fuel Assembly Characteristics	
Radiological Parameters:	
Group 3:	
Maximum Burnup:	37,200 MWd/MTU
Minimum Cooling Time:	12-Years
Maximum Initial Enrichment:	See Table 3
Minimum Initial Bundle Average Enrichment:	3.38 wt. % U-235
Maximum Initial Uranium Content:	198 kg/assembly
Maximum Decay Heat:	260 W/assembly
Group 4:	
Maximum Burnup:	40,000 MWd/MTU
Minimum Cooling Time:	15-Years
Maximum Initial Enrichment:	See Table 3
Minimum Initial Bundle Average Enrichment:	3.4 wt. % U-235
Maximum Initial Uranium Content:	198 kg/assembly
Maximum Decay Heat:	260 W/assembly

TABLE 3

Minimum Boron-10 Areal Density as a Function of Maximum Fuel Assembly Lattice Average Enrichment

NUHOMS® -61BT DSC Basket Type	Maximum Fuel Assembly Lattice Average Enrichment(wt % U-235)	Minimum Boron-10 Areal Density for Boral® (g/cm^2)	Minimum Boron-10 Areal Density for Borated Aluminum, Metamic®, and Boralyn® (g/cm^2)	Areal Density Used in the Criticality Evaluation [75% Credit for Boral®] (g/cm^2)
	Intact Fuel Assemblies			
A	3.7	0.025	0.021	0.019
B	4.1	0.038	0.032	0.029
C	4.4	0.048	0.040	0.036

5. (b) Contents of Packaging (continued)

(2) Maximum quantity of material per package

(a) The quantity of material authorized for transport is 61 intact standard BWR fuel assemblies with or without fuel channels. Where a DSC is to be loaded with fewer fuel assemblies than the DSC capacity, dummy fuel assemblies with the same nominal weight as a standard fuel assembly shall be installed in the unoccupied spaces.

(b) For material described in 5(b)(1) the approximate maximum payload is 21,500 lbs.

(c) Criticality Safety Index "0"

6. Fuel assemblies with missing fuel rods shall not be shipped unless the missing fuel rods are replaced by dummy rods that displace an equal or greater amount of water.

7 For operating controls and procedures, in addition to the requirements of Subpart G of 10 CFR Part 71:

(a) Each package shall be both prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the application, as supplemented. In addition this will include:

(1) verification of the basket type A, B, or C, by inspection of the last digit of the serial number on the grapple ring at the bottom of the DSC,

(2) verification that the fuel assemblies to be placed in the DSC meet the maximum burnup, maximum initial enrichment, minimum cooling time, and maximum decay heat limits for fuel assemblies as specified in Tables 2 and 3. The enrichment limit must correspond to the basket type determined in 7(a)(1) above.

(b) All fabrication acceptance tests and maintenance shall be performed in accordance with Acceptance Tests and Maintenance Program in Chapter 8 of the application, as supplemented. In addition this will include replacement of the cask lid bolts after 85, or fewer, round trip shipments to ensure that the allowable fatigue damage factor will not be exceeded during normal conditions of transport.

8. This package is approved for exclusive use by rail, truck, or marine transport.

9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

10. Revision No. 1 of this certificate may be used until August 31, 2008.

11. Expiration Date: August 31, 2012.

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

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REFERENCES

Transnuclear Inc., Safety Analysis Report for the NUHOMS®-MP197 Transport Packaging, dated May 2, 2001.

Transnuclear Inc., letters dated January 29, 2002, January 31, 2002, March 1, 2002, March 20, 2002, April 29, 2002, May 16, 2002, and June 19, 2007

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Robert A. Nelson, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Date: August 30, 2007

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C 20555-0001

SAFETY EVALUATION REPORT

Docket No. 71-9302
Model No. NUHOMS®-MP197
Certificate of Compliance No. 9302
Revision No. 2

SUMMARY

By application dated June 19, 2007, Transnuclear, Inc. (TN) requested renewal of Certificate of Compliance No 9302, for its Model No. NUHOMS®-MP197 transport packaging. TN made its request in a timely manner. TN did not request any changes to the package design or authorized contents. The certificate has been renewed for a five-year term.

EVALUATION

By application dated June 19, 2007, TN requested renewal of Certificate of Compliance No. 9302, for Model No. NUHOMS®-MP197 transport packaging [USA/9302/B(U)F-85]. TN did not request any changes to the package design or authorized contents. The staff reviewed the documents referenced in the certificate and determined that the required documentation was available and complete.

CONCLUSION

The certificate has been renewed for a five year term that expires on August 31, 2012. This change does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9302
Revision No. 2 on August 30, 2007